

REMARKS

Claims 1-24 are pending in this office action, all of which stand rejected. Claims 1 and 19 have been rejected under 35 U.S.C. § 101. Claims 1-24 have been rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,233,668 (Harvey) in view of U.S. Published App. No. 2003/0177435 (Budd). Following entry of the amendment, claims 1-5, 14, and 19-24 will have been amended.

Section 101 Rejection

Claims 1 and 19 have been amended to recite that the medium is a “computer-readable storage medium” (with underlining showing the language added to claims 1 and 19). This amendment does not introduce new matter, and is supported by paragraph 0024 of the original application. This amendment renders moot the signal issue raised by the Examiner, and applicants request that the section 101 rejection of claims 1 and 19 be withdrawn.

While dependent claims 2-4 and 20-24 are not subject to the section 101 rejection, applicants have likewise added the word “storage” to these claims, in order to make the language of the dependent claims consistent with that of their base claims.

Section 103 Rejection

The independent claims (1, 5, 14, and 19) have each been amended, thereby rendering the section 103 rejection of those claims moot. The amendments to these claims has been made to more particularly point out the invention, and not for any reason related to patentability.¹ Applicants do not acquiesce in the Examiner’s position that the independent claims are obvious over a combination of Harvey and Budd. In particular, applicants note that the Examiner still has not addressed the feature whereby a page table (or related structure) is used to perform a non-address mapping function that is dependent on data that has a characteristic present in the page table (or related structure) but not in the shadow. (The Examiner acknowledged that Harvey does not teach that the characteristic is present in the page table but not in the shadow, but has not pointed to this feature in Budd.) In this regard, the Examiner has not met the burden to establish a *prima facie* case of obviousness in the

¹ As noted above, the addition to the word “storage” in claims 1 and 19 is being made to overcome the section 101 rejection, but the remaining amendments to claims 1 and 19 do not address the section 101 rejection.

manner set forth in MPEP 706.02(j). Nonetheless, in the interest of furthering prosecution, applicants have amended the independent claims. For the reasons set forth below, the independent claims define over the applied art.

Claim 1, for example, now recites that an item of software “uses said page table to perform a non-address-mapping action that depends, for correct operation of said item of software, on data being present, in said one of said plurality of page tables, that said item of software has previously written to said one of said plurality of page tables and that said item of software expects to be present in said one of said plurality of page tables, ~~that has said data having~~ a characteristic that is present in said one of the plurality of page tables but not present in said first shadow page table, wherein said first shadow page table is used to translate addresses for said item of software and said one of the plurality of page tables is not used to translate addresses for said item of software.” (Underlining and strikethrough show the additions and deletions.)

In particular, claim 1 now calls for:

- The software performs a non-address-mapping action that depends on certain data being present *for correct operation of the item of software*.
- The data on whose presence the software relies has the following characteristics:
 - The data is present *in said one of said plurality of page tables* (i.e., the page table on which the shadow is based).
 - The data was *previously written* to the aforementioned page table *by the item of software* (i.e., by the same item of software that now relies on that data for its correct operation).
 - The item of software *expects the data to be present in the aforementioned page table*.
- The shadow is *used to translate addresses*. Not only is the shadow used to translate addresses, but it is used to translate addresses specifically *for the above-mentioned item of software*.

- The “said one of the plurality of page tables” (i.e., the page table on which the shadow is based) *is not used to translate addresses* for the aforementioned item of software.

Applicants draw the Examiner’s attention to the italicized features, and note that these features are not in the art as applied.

The Examiner’s correspondence between elements in the applied art and in claim 1 appears to be as follows:

Claim 1	Applied Art
“page table”	Harvey’s page table, mentioned at col. 4, ll. 1-3.
“first shadow page table”	Harvey’s “self-mapping page tables” mentioned at col. 4, ll. 1-3
“non-address-mapping action”	Comparing stored checksum and data in paragraph 0062 of Budd
“item of software”	Application software, allegedly described in Budd paragraph 0062.

Even if the Examiner’s proposed correspondence were correct, neither Harvey, nor Budd, nor these references in combination, teach or suggest the features of claim 1 as amended.

Under the correspondence proposed by the Examiner, the Examiner would have to demonstrate that Harvey’s self-mapping page tables (the “first shadow page table” of claim 1) is used to translate addresses, but that Harvey’s “page table” (the “page table” of claim 1) is not used to translate addresses. There is no teaching or suggestion in Harvey that the self-mapping page table is used to translate addresses and that the page table is not. Harvey, in fact, shows that all page tables can be used for address translation (see Fig. 9, items 140 and 142), and that a particular page table is chosen depending on circumstance. In contrast, in claim 1, the shadow is used to translate addresses for a particular application, and the original page table is not used to translate addresses for that application. This feature is contrary to the teachings of Harvey. Moreover, the combination of Harvey with Budd does not yield this feature, since Budd does not teach or suggest that there are two page tables, one of which is

used for address translation and the other of which is not used for address translation. Accordingly, claim 1, as amended, patentably defines over the combination of Harvey and Budd.

Moreover, claim 1 now recites that correct operation of the “item of software” (Budd’s application program) is dependent on some data being present in the page table, that the item of software previously wrote that data to the page table, and that the item of software now expects the data to be present in the page table. Even if the “non-address-mapping action” is like Budd’s comparison of a checksum, Budd’s application program does not operate correctly (or not) depending on a particular checksum (or depending on data from which the checksum is computed). Budd simply checks stored data against a checksum to determine whether the data is corrupted, but the software will behave correctly irrespective of whether or not the checksum validates. Even if the checksum does not correspond to the data, this simply indicates that the data has been corrupted, but the application software continues to behave normally and correctly. By contrast, in claim 1, the non-address-mapping action depends, for correct operation of the software, on certain data being present in the page table. “depends, for correct operation ...” means that, if the dependent condition is not met, then the software does not operate correctly. This feature is not taught or suggested in Budd, or Harvey, or in any combination of these references.

Finally, neither Budd nor Harvey suggests that the data on which the non-address-mapping function relies was written by the *same* software that is attempting to perform the non-address-mapping action. While Budd mentions a checksum, the applied portion of Budd does not state what entity (software or otherwise) previously created the data against which the checksum is to be validated. Harvey does not remedy this deficiency in Budd’s checksum.

Accordingly, applicants submit that claim 1, as amended, patentably defines over the references as applied.

Independent claims 5, 14, and 19 are not identical to claim 1 in language, scope, or substance. However, applicants note that these claims recite similar features, which define over the references as applied for reasons similar to those described above.

Finally, applicants note that the dependent claims are patentable at least by reason of their dependency.

For the foregoing reasons, applicants submit that the claims define over the art as applied, and request that the section 103(a) rejection be reconsidered and withdrawn.

No New Matter

The amendments to the independent claims do not introduce new matter. The amendments are supported at least by the sections cited below. The amendments to claim 1 are shown, together with their support, and the amendments to claims 5, 14, and 19 have analogous support.

wherein an item of software uses said page table to perform a non-address-mapping action that depends, for correct operation of said item of software, {paragraph 0046} on data being present, in said one of said plurality of page tables, that said item of software has previously written to said one of said plurality of page tables and that said item of software expects to be present in said one of said plurality of page tables, {paragraph 0046} that has said data having a characteristic that is present in said one of the plurality of page tables but not present in said first shadow page table, wherein said first shadow page table is used to translate addresses for said item of software and said one of the plurality of page tables is not used to translate addresses for said item of software {paragraphs 0019 and 0047-0053}

Finality

Applicants note that the prior Office Action (dated June 16, 2006) is a Final Office Action, and the response filed on August 16, 2006 is a response under 37 C.F.R. § 1.116. Since the August 31, 2006 Office Action is non-final, the Examiner appears to have withdrawn the finality of the June 16, 2006 Office Action on the Examiner's own initiative, and applicants will proceed on the basis that such finality has been withdrawn.

Case Status

PAIR shows the status of this case as being "Notice of Appeal Filed." The transaction history states that a Notice of Appeal was filed on October 12, 2006, although the Image file wrapper does not show a Notice of Appeal.

DOCKET NO.: MSFT-2819/305829.01
Application No.: 10/697,197
Office Action Dated: August 31, 2006

PATENT

Applicants have not filed an appeal in this case, and believe that PAIR's reference to an appeal is an error. Applicants request that the Examiner investigate and correct this error.

Conclusion

For all the foregoing reasons, applicants submit that this case is in condition for allowance.

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